

What is claimed is:

1. A lead assembly comprising:
  - a lead body extending from a distal end to a proximal end;
  - 5 a conductor disposed within the lead body;
  - a piston movably disposed within the lead body; and
  - a fixation helix supported by the piston at a first portion of the fixation helix,the first portion of the fixation helix forming a drive mechanism that advances the fixation helix.
- 10 2. The lead assembly as recited in claim 1, wherein the first portion of the fixation helix is coupled with the piston.
3. The lead assembly as recited in claim 1, wherein the piston has a  
15 recess, and at least a portion of the first portion of the fixation helix is disposed within the recess.
4. The lead assembly as recited in claim 3, wherein the recess has a  
helical shape.
- 20 5. The lead assembly as recited in claim 3, wherein the recess has a first width and the first width is less than a diameter of the first portion of the fixation helix.
- 25 6. The lead assembly as recited in claim 3, wherein approximately 1/3 to 1/2 of a diameter of the fixation helix is disposed within the recess.
7. The lead assembly as recited in claim 1, further comprising a housing  
portion disposed near the distal end of the lead body, and a guide is disposed on an  
30 inner surface of the housing portion, and the guide guides the drive mechanism.

8. A lead assembly comprising:  
a lead body extending from a distal end to a proximal end;  
a housing disposed near the distal end of the lead body;  
a conductor disposed within the lead body;  
5 a piston movably disposed within the housing;  
a fixation helix coupled with the piston along a first longitudinal portion of  
the fixation helix, the first portion of the fixation helix forming a drive mechanism  
that advances the fixation helix; and  
a guide disposed within an inner surface of the housing.
- 10 9. The lead assembly as recited in claim 8, wherein the guide is a  
helical guide.
- 15 10. The lead assembly as recited in claim 8, wherein the helical guide is  
a segmented helical guide.
11. The lead assembly as recited in claim 8, wherein the fixation helix is  
coupled with the piston along a recess within the piston.
- 20 12. The lead assembly as recited in claim 8, wherein the fixation helix  
has an inner diameter and the piston has an outer diameter, and the outer diameter is  
greater than the inner diameter prior to coupling the fixation helix with the piston.
- 25 13. The lead assembly as recited in claim 8, wherein the fixation helix is  
coupled with the piston along a helical recess within the piston.
14. The lead assembly as recited in claim 8, wherein the fixation helix is  
electrically coupled with the conductor.

15. A lead assembly comprising:  
a conductor;  
a piston electrically coupled with the conductor; and  
an active fixation helix supported by the piston at a first portion of the  
5 fixation helix, the first portion of the fixation helix forming a drive mechanism that  
longitudinally advances and retracts the fixation helix.
16. The lead assembly as recited in claim 15, wherein the active fixation helix is  
electrically coupled with the piston.
- 10 17. The lead assembly as recited in claim 15, wherein the active fixation helix is  
recessed within a portion of the piston.
18. The lead assembly as recited in claim 15, wherein the active fixation helix is  
15 mechanically coupled with the piston.
19. A method comprising:  
providing a lead assembly including:  
a lead body extending from a distal end to a proximal end;  
20 a conductor disposed within the lead body;  
a piston movably disposed within the lead body;  
a fixation helix supported by the piston at a first portion of the  
fixation helix, the first portion of the fixation helix forming a drive  
mechanism;  
25 rotating the fixation helix; and  
longitudinally driving the fixation helix with the drive mechanism.
20. The method as recited in claim 19, further comprising recessing at least a  
part of the first portion of the fixation helix within the piston.

21. The method as recited in claim 19, further comprising recessing approximately  $\frac{1}{3}$  to  $\frac{1}{2}$  of a diameter of the fixation helix within the piston.
22. The method as recited in claim 19, further comprising recessing at least a  
5 part of the first portion of the fixation helix within a helical groove of the piston.
23. The method as recited in claim 19, further comprising coupling the first portion of the fixation helix with the piston.